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9. A two-way causal chain between tourism development and quality of life in a small island destination: An empirical analysis[1]

Abstract

This study postulates that tourism development (TD) and residents' quality of life (QoL) may have an intrinsically reciprocal relationship. More particularly, the study examines the relationship between TD and QoL for the island of Aruba, with economic development as a mediating variable. This investigation contributes to the literature by expanding our understanding of the development goal, and by emphasizing the active role of QoL in the relationship with TD through a subjective well-being approach. The study also provides a new methodological framework for studying the relevant bilateral relationships, and advances the theory through new propositions. The methodology consists of applying exploratory and confirmatory factor analyses combined with structural equations modeling. The results suggest that TD has a direct and indirect impact on QoL, and that QoL has an indirect effect on TD, via economic development. These findings provide new insights on the dimensions shaping the link between TD and QoL.

Keywords: tourism development, quality of life, subjective well-being, economic development, small island destination

1. This chapter is based on:
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9.1 Introduction

This study presents a cross-sectional examination of the interconnectedness between tourism development (TD) and quality of life (QoL) in the island of Aruba, with economic development as a mediating variable. According to Baron & Kenny (1986), a mediating variable is one that intervenes between dependent and independent variables, requiring a significant relationship between (a) the independent variable and the mediating variable; and (b) the dependent variable and the mediating variable. The intervention of a mediating variable creates further possibilities for a relationship between TD and QoL, i.e., through the indirect path.

The literature in the field has typically tended to consider improvement in people's living conditions as the ultimate goal of development (e.g., United Nations Development Program, 1996; Peet & Hartwick, 1999; Sen, 1999; Haughland et al., 2011). However, studies by Ranis et al. (2009), Dissard & Deller (2000), Deller et al. (2001) have shown that QoL could have a proactive role in determining economic development, whereas investigations by Croes (2012), and Ridderstaat et al. (2014) have found that QoL could likewise have a bearing on TD. This finding has implications for our understanding of the development concept. Consequently, people's QoL improvement is no longer strictly an end towards development, but could become a means to influence other forms of development, such as economic development and TD.

QoL refers to a dynamic set of material and non-material dimensions that define people's lives (Stiglitz et al., 2009). In this sense, a material element such as income is only one of many determinants of people's QoL. According to Sen (1999), QoL centers "on the way human life goes … and not just on the resources or income that a person commands." (p. 24). Non-material conditions such as health, environmental quality, security, feelings of pride in one's own community are also important. For example, a study by Cummins (1996) has identified 173 different domains of QoL out of 1,500 articles that addressed this topic. It was found that non-material issues accounted for about 89 percent of the presented dimensions of QoL, thus signaling the importance of this group in determining people's QoL.

The multi-dimensional constituents of QoL have been particularly relevant in studies based on the subjective approach. This method is predicated on the use of micro data, where the individual and/or the community constitute(s) the unit of analysis. The aim of this approach is to assess the individuals' personal life experience within social, economic, and health-related domains (Genç 2012). In this instance, it would be important to measure people's responses to a set of questions, in particular as they report their own subjective states and values (Stiglitz et al., 2009). On the

other side of the spectrum there is the objective approach, where the analysis departs from macro-underpinnings that are in some or other way considered to be representative of each of the individuals in the groups of study. The indicators applied in this case are external to the individual, and encompass measures such as levels of material living and their components, family life, physical and mental health, and work environment (Easterlin & Angelescu 2012).

The current study sets out to make four important contributions towards the TD-QoL literature. Firstly, it contributes towards redefining the development goal beyond that of improving people's living conditions. Secondly, the study sheds more light on the active role of QoL in the relationship with TD by departing from a subjective well-being approach, which allows for a multidimensional analysis of the constructs involved in this study. This understanding is stretched further by integrating the mediating role of economic development, which contributes towards the indirect relationships between TD and QoL. Thirdly, the study contributes to the literature of the field by providing a methodological framework for determining the bilateral relationship in a subjective approach-based environment. Although the applied multivariate techniques are well known in the literature, the use of structural equation modeling in a two-way environment is quite likely original. Fourthly, the study contributes towards advancing the theoretical base of the field by suggesting hitherto unexposed and unexplored linkages within the TD-QoL connection. The aim is then to use the findings of the study to draw theoretical propositions (Yin 2009). According to authors such as Athiyaman (1997), Goeldner (2005), and Moriarty (2012), tourism studies need to contribute more towards the pursuit of theory building. Additionally, this study complements the results of a study by Ridderstaat et al. (2014), who approached the relationship between the constructs TD, QoL and economic development using macro statistics.

The motivation for using the island of Aruba as the case for the current study is its recent development into one of the most prominent tourism destinations in the Caribbean. Tourism has become the island's mainstay since 1986, and currently it has one of the highest living standards in the region (Croes, 2011).

The remainder of this paper is organized as follows: Section Two offers a survey of the literature on the bilateral linkage between TD-QoL-economic development. Section Three discusses the case used for the current study, and Section Four considers the data collection framework and the applied analysis methods. Section Five offers the empirical results, while Section Six presents a number of conclusions and provides the policy implications as well as directions for future research.

9.2 Literature review

Development is a concept that is anchored into numerous theoretical perspectives. For example, Peet & Hartwick (1999) distinguished between economic theories of growth and development, sociological theories of modernization, Marxist and Neo-Marxist theories, post-structuralism, post-colonialism, and post-developmentalism, and also feminist theories, to name a few. The overarching line of thinking within all these theoretical foundations is predicated on the concept of development itself, which, according to Peet & Hartwick (1999), in its weakest form, has to do with the sense of more of everything for everyone. In its strongest sense, the authors considered development in terms of using the productive means of a society to improve the living conditions of the poorest people. However, development is not strictly aimed only at the poor; it is geared towards all people in a society. Haugland et al. (2011), for example, argue that development must create value for individuals; in this sense, hinting at a more general aim of this concept, namely, to improve the QoL of all people.

Economic development is generally regarded as a means towards achieving human development (United Nations Development Program, 1996). However, the literature is not entirely clear about the propensity of economic development to improve the QoL of people. On the one hand, Easterlin (1995) argued that raising incomes does not increase the QoL of people, because the material norms on which judgments of well-being are based increase in the same proportion as the actual income of a society. More generally, an increase in output itself causes people to upwardly adjust their aspirations, which counters the positive effects of economic growth on welfare (Easterlin, 1974), in what is also known as the Easterlin Paradox. On the other hand, according to Stiglitz et al. (2009), people's QoL is actually affected by economic resources such as income. A study by Ranis et al. (2000) found empirical evidence of economic progress affecting human development, the latter being a proxy for QoL (Hagerty & Land, 2012). Moreover, recent studies by Hagerty & Veenhoven (2003) and Stevenson & Wolfers (2008) both suggest that economic growth does improve national happiness, which in its turn is an element of subjective well-being (Graham, 2011). Croes (2011) also found a significant positive relationship running from economic growth to QoL, based on a panel of 17 small islands that are to some extent involved with TD. However, a recent study by Ridderstaat et al. (2014) found that economic growth seems not to be effective in improving the overall short- or long-term QoL of people on the island of Aruba. Although one can discern a slight inclination towards economic development having an impact on people's QoL, the evidence is

still not conclusive, and clearly more studies are needed to provide a more definitive answer to this issue.

What is more candid is the impact of TD on QoL. Studies by, for example, Andereck & Vogt (2000); Fredline et al. (2005); Kim (2002); Gjerald (2005); Sdrali & Chazapi (2007); Andereck et al. (2007); Marzuki (2009); Aref (2011); Mai et al. (2013); and Guo et al. (2013) have found that TD, in some way or another, had an impact on the QoL of either individuals or the community. These studies were almost exclusively based on the subjective approach. For example, Andereck and Nyaupane (2010) surveyed residents of each county of Arizona (U.S.A.), and found that respondents sensed that tourism had a positive influence on their QoL, especially in terms of recreation amenities and feelings of community pride.

While previous studies have detailed the impacts of two specific developments (economic and tourism) on the QoL of people, the literature has also adequately covered the relationship among TD and economic growth. Several studies have found a unilateral relation, either running from TD to economic development (e.g., Modeste, 1994; Lanza et al., 2003; Kreishan, 2011), or from economic development to TD (e.g., Oh, 2005; Tang & Jang, 2009). In several instances, the relationship was found to be bilateral (e.g., Dritsakis, 2004; Kim et al., 2006; Lee & Chien, 2008; Ridderstaat et al., 2013c), thus suggesting active roles for both TD and economic development in terms of their influence on each other.

The literature has, to some extent, considered the role of QoL as an active factor influencing economic development (Ranis et al., 2000; Dissard & Deller, 2000; Deller et al., 2001) or TD (Croes, 2012; Ridderstaat et al., 2014). For example, Deller et al. (2001) found that rural areas with high levels of key natural resource amenity endowments and overall QoL experience higher overall levels of growth, thus suggesting an active role for QoL in circumscribing economic development. A proactive role for QoL was also found in the case of tourism. Croes (2012) determine the existence of a two-way connection between TD and human development in Nicaragua, whereas the study by Ridderstaat et al. (2014) found such a bilateral connection in the case of the island of Aruba. Moreover, the latter study found that QoL could also have an indirect effect on TD, i.e., through the mediating role of economic development, thereby augmenting the range of possible influences of QoL.

While these studies on the influence of TD on QoL were almost exclusively based on the subjective approach, those on the impact of QoL on TD were largely based on the objective approach. In order to make more accurate inferences about the true relationship between TD and QoL, researchers need to study this relationship from both the objective and subjective perspectives, because both approaches have certain imperfections

(Ridderstaat et al., 2013c). For example, the objective approach is based on macroeconomic data that may be biased either upwards or downwards, thereby inadequately representing people's well-being. Also, this approach would likely produce analyses based on one-dimensional constructs (e.g., economic development affecting QoL), that would not allow for an understanding of what domains of one factor is affecting those of the other one. Alternatively, subjectively-based studies may be affected by the social comparison syndrome, where people compare themselves to others when assessing their own well-being position. An integrated approach may, thus, offer the best analysis, and has been suggested by several authors (Costanza et al., 2007; Das, 2008; Kazana & Kazaklis, 2009; Stiglitz et al., 2009). Having both assessments could, therefore, provide the best understanding of the relationship between TD and QoL.

The review of the literature set out above suggests an extended structure of bilateral linkages between TD and QoL, with economic development as a mediating factor. The challenge for future studies is to explore these relationships both from an objective and a subjective approach, with a view to create the most accurate picture of the linkage between these constructs. The likely influential capacity of QoL also transcends the goal of development beyond improving the living conditions of people, because human development is engaged as an active factor influencing other forms of development. As such, the aim of development becomes a continuum of developments that are influencing each other.

9.3 Case of study

Tourism has been the mainstay of Aruba's economy since 1986. According to the World Travel and Tourism Council, tourism accounted for about 84.1% of the total GDP in 2013 (www.wttc.org), which is one of the highest such percentages in the world. The tourism industry has also contributed to a higher standard of living for the people in Aruba. For example, the GDP per capita rose from US$ 6,662 in 1986 to US$ 24,429 in 2013 (Central Bank of Aruba, 2014), which is one of the highest in the region. Furthermore, according to the International Monetary Fund, Aruba has become one of the most socially developed islands in the Caribbean (IMF, 2008). Its public education system is considered to be of high quality (IMF, 2005). The island has also introduced a universal health care system for all its citizens in 2001, and, furthermore, Aruba's ratio of public spending on health to GDP is one of the highest in the region (IMF, 2013).

Nonetheless, the developments since 1986 have not been without challenges. The expansion of the tourism industry was accompanied by an accelerated growth in the population, and was also fueled by a large

immigration influx driven by employment in the tourism industry. High numbers of immigrants kept the labor productivity growth at low rates, with possible effects for the long-run economic growth potential of the island (IMF, 2005). The high dependency on tourism has also made the island vulnerable to shocks, such as the global financial crisis of 2007-2010 (IMF, 2013). The fiscal deficits and public and external debts have increased over the years, requiring authorities to introduce notable reforms in, for example, the old age pension fund, and the general health care scheme (IMF, 2013) that affected the rights of the recipients of these benefits. These issues point at possible problems in the QoL of the people of Aruba, with significant potential effects on both tourism and economic growth.

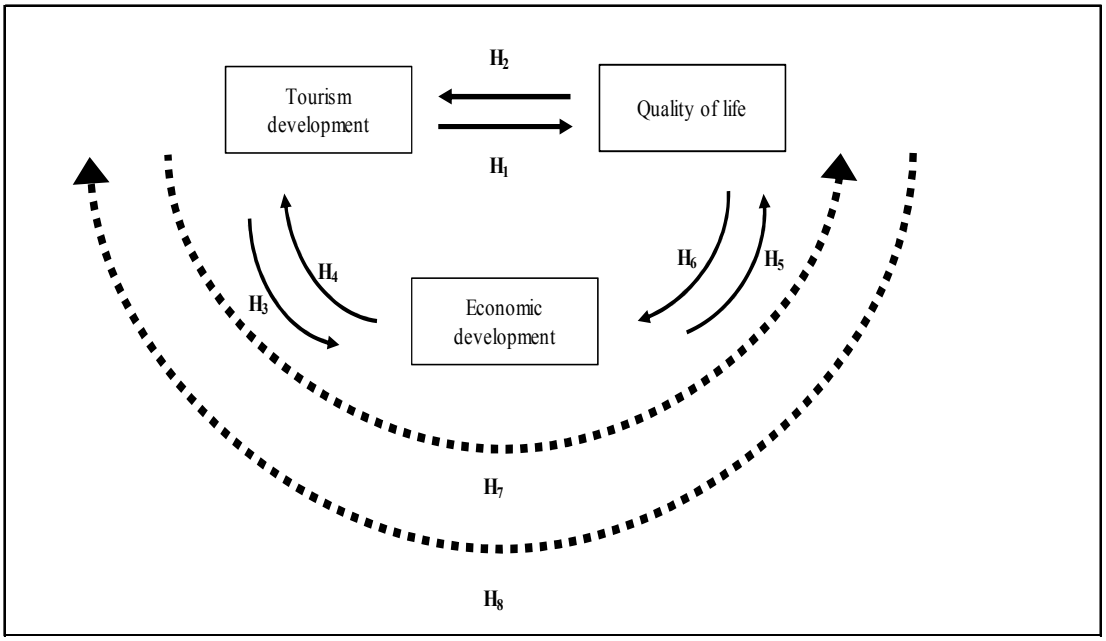
9.4 Data and methods

9.4.1 Conceptual framework

This study is predicated on the conceptual framework integrated and presented in Figure 9.1, which specifies a series of possible direct and indirect relationships between TD and QoL, with economic growth as a mediating variable. The figure shows eight hypotheses, where the first six ones (H_1-H_6) describe direct bilateral connections between, respectively, TD-QoL, TD-economic development, and QoL-economic development. The last two hypotheses (H_7 and H_8) address the indirect relationships between TD and QoL, through economic development.

9.4.2 Questionnaire design, sampling, and data collection

The questions in the survey were developed based on both the available literature as well as item scales developed by the authors (Table 9.1).The survey consisted of six categories that covered the relationship between the constructs. The first category (8 questions) dealt with the impact of tourism on residents' QoL. The second part (5 questions) covered the impact of the economy on residents' QoL. Section 3 (4 questions) dealt with the impact of residents' QoL on TD. The fourth block (3 questions) covered the impact of economic development on TD, whereas the fifth block (5 questions) aimed to measure the impact of QoL on the economy. The last section covered the impact of TD on economic development. For these sections, the survey applied two types of 5-point Likert scales:



Hypotheses

Direct bilateral relation between tourism development and quality of life

H_1: Tourism development has an impact on the quality of life of residents of a destination.

H_2: Quality of life of residents of a destination has an impact on the tourism development of a destination.

H_3: Tourism development has an impact on long-run economic development.

H_4: Economic development at a destination has an impact on tourism development

H_5: Economic development has an impact on the quality of life of residents.

H_6: Quality of life of residents has an impact on the economic development of a destination.

Indirect bilateral relation between tourism development and quality of life

H_7: Tourism development indirectly impacts the quality of life of residents, through the mediating role of economic development.

H_8: Quality of life of residents indirectly impacts tourism development, through the mediating role of economic development.

Figure 9.1: Conceptual scheme of TD, QoL and economic development relation

Table 9.1: Constructs, causality, survey items and their source

Nr.	Construct	Causality	Survey item	Source
1	QoL	TD → QoL	Tourism's impact on people's opportunity to get a job	Andereck & Vogt (2000); Kim (2002); Andereck & Nyaupane (2010); Liburd et al. (2012); Rempel (2012); Kim et al. (2013)
2	QoL	TD → QoL	Tourism's impact on people's wage or income	Liburd et al. (2012)
3	QoL	TD → QoL	Tourism's impact on the natural areas people know	Liburd et al. (2012)
4	QoL	TD → QoL	Tourism's impact on people's culture	Andereck & Vogt (2000); Kim (2002); Rempel (2012)
5	QoL	TD → QoL	Tourism's impact on people's shopping opportunities	Andereck & Vogt (2000); Andereck & Nyaupane (2010)
6	QoL	TD → QoL	Tourism's impact on people's personal experience with crime	Andereck & Vogt (2000); Andereck et al. (2007); Rempel (2012)
7	QoL	TD → QoL	Tourism's impact on the prices people pay for goods and services	Rempel (2012)
8	QoL	TD → QoL	Tourism's impact on people's standard of living	Kim (2002); Croes et al. (2011); Rempel (2012); Kim et al. (2013)
9	QoL	economic development → QoL	People's satisfaction with the quality of goods available at local stores	Lee & Sirgy (2012)
10	QoL	economic development → QoL	People's satisfaction with the prices charged at local stores	Fredline et al. (2005); Andereck et al. (2007); Andereck & Nyaupane (2010); Lee & Sirgy (2012)
11	QoL	economic development → QoL	People's job opportunities	Andereck et al. (2007); Andereck & Nyaupane (2010)

Table 9.1: Constructs, causality, survey items and their source *(continued)*

Nr.	Construct	Causality	Survey item	Source
12	QoL	economic development → QoL	Amount of sleeping hours people get each night because of their participation in the economy	Rath & Harter (2010)
13	QoL	economic development → QoL	Amount of exercise hours people get each day because of their participation in the economy	Rath & Harter (2010)
14	Tourism development	QoL → TD	People being friendly to tourists	Self-developed
15	Tourism development	QoL → TD	People being unfriendly to tourists	Self-developed
16	Tourism development	QoL → TD	People being helpful to tourists because of their skills/education	Self-developed
17	Tourism development	QoL → TD	People trying to economically benefit from each tourist they meet	Self-developed
18	Tourism development	economic development → TD	Tourism development being affected by the marketing efforts by the government	Self-developed
19	Tourism development	economic development → TD	Tourism development being affected by the quality of the infrastructure	Rempel (2012)
20	Tourism development	economic development → TD	Tourism development being affected by the quality of the education system	Self-developed
21	Economic development	QoL → economic development	People buying only the goods and services they really need	Self-developed
22	Economic development	QoL → economic development	People buying a car this or next year	http://www.conference-board.org
23	Economic development	QoL → economic development	People's skills and education contributing to the company they work for	Self-developed
24	Economic development	QoL → economic development	People's skills and education complying with the daily economic and financial activities they are involved with	Self-developed

Table 9.1: Constructs, causality, survey items and their source *(continued)*

Nr.	Construct	Causality	Survey item	Source
25	Economic development	QoL → economic development	People buying or constructing a house this or next year	http://www.conference-board.org
26	Economic development	TD → economic development	Tourism development affecting the economy over time	Kim (2002); Andereck et al. (2000); Fredline et al. (2005); Andereck et al. (2007); Andereck & Nyaupane (2010); Liburd et al. (2012); Rempel (2012)
27	Economic development	TD → economic development	Tourism development affecting the number of jobs over time	Fredline et al., (2005); Liburd et al. (2012); Rempel (2012)
28	Economic development	TD → economic development	Tourism development affecting the number of business opportunities over time	Kim (2002); Fredline et al. (2005); Liburd et al. (2012); Rempel (2012)

- No effect – Minor effect – Neutral – Moderate effect – Major effect (sections 1 and 2);
- Extremely unlikely – Unlikely – Neutral – Likely – Extremely likely (sections 3 to 6).

Most of the items included in Table 9.1 originated from previous investigations, while the authors developed items number 14 - 18 and 20, 21, 23, and 24 specifically for this study. The self-developed items 14 - 17 emanated mostly from Ridderstaat et al. (2013a, 2013b, 2014), and represent the impacts of QoL on TD. The lack of studies based on the subjective approach, covering this impact, required self-development of these questions. Item number 18 reflects the role of governments to stimulate tourism by promoting the destination (Croes, 2011), whereas item number 20 stems from the notion of Amoah & Baum (1997) and Baum et al., (1997) that the quality of the human factor, such as education, is imperative for TD. These two items are considered from the viewpoint of the impact of the economic structure on TD. Items 21, 23, and 24 have been derived from two important QoL factors that have a bearing on economic development, namely consumption (item number 21) and financial education (items number 23 and 24). Consumption is one of the key components of the gross domestic product (Mankiw, 1998), and has the potential to influence economic development. Financial education of people (which includes

skills) could also foster economic development, according to Hogarth (2006).

The general experience with surveys is that respondents tend to shy away from long elaborate questionnaires. Therefore, each construct (TD, QoL, and economic development) was measured according to a selected and limited number of questions. The questionnaire was first pre-tested on several groups of potential respondents, including a test session with 20 students from the Financial Economic Faculty of the University of Aruba. The authors incorporated the comments of the test groups into the survey whenever considered relevant. The period of data collection was from November 23rd to December 13th, 2013. The survey was adminstered by a group of trained and experienced surveyors who visited multiple strategic locations around the island to collect the data. These strategic sites were identfied based on the diversity of visitors at these places. Potential respondents were approached at random by surveyors to assess whether they belonged to the age group and place of residence targeted by the respective surveyor. When a person was assessed to fit the participation requirements (i.e., the correct gender, age group, and place of residence), the surveyor went through the questionnaire with the respondent in a step-by-step manner (thus following a face-to-face approach).

According to Anderson and Gerbing (1988), a minimum sample of 150 or more is needed in order to obtain parameter estimates with standard errors small enough to be of practical use. Fabrigar et al. (1999), however, contend that a sample of fewer than 400 may be likely to yield distorted results. Therefore, the authors in the current study based the data collection on a quota sample of 450 residents, aged 15 years and older. The applied quota sampling technique uses proportions (quotas) for different types of potential respondents (Smith 2010), as this sampling method serves to overcome the problems of unrepresentative samples (Veal 2006). If the sampling is based on certain dimensions of the population that have the same distribution as the population, then it is likely that the other variables over which the researcher has no control are also representative of the population (Cooper & Schindler, 2011). The quota sampling process made use of information available beforehand on the population in Aruba, by means of the latest census data obtained from the Central Bureau of Statistics. The applied layers were (1) gender; (2) place of residence; and (3) age.

9.4.3 Methods of analysis

The analysis followed a series of steps aimed at assessing the relationship between TD and QoL. The first step consisted of an exploratory factor analysis (EFA) examining the joint characteristics of the survey variables. The aim here was to look for a simple latent variable structure that could account for the inter-correlations of an observed set of variables (Loehlin 2004). The EFA, in other words, serves to evaluate the dimensions of a group of variables stemming from the questionnaire, determining the smallest number of interpretable factors explaining the correlation among the variables (Brown 2006). According to Fabrigar et al. (1999), an EFA can be conducted as an initial study to provide a basis for a confirmatory factor analysis (CFA) model.

The second stage involved applying a CFA to determine the underlying dimensions of the constructs included in the study. While the EFA is generally descriptive in nature, the CFA is prescriptive, and requires the researcher to specify beforehand all the aspects of the factor model by means of a strong empirical or conceptual foundation (Brown 2006). The researcher takes a specific hypothesized structure and notes how well it accounts for the observed relationships in the data (Loehlin, 2004).

The third stage of the analysis involved structural equation modeling (SEM). This technique produces estimates of all the hypothesized relationships among the selected variables in a theoretical model (Maruyama, 1998). The SEM is a confirmatory approach rather than an exploratory one, and explicitly captures the unreliability of measurement in the model, and, thus, gives an accurate estimate of the structural relationships between latent variables (Maggino and Zumbo 2012). The specification of a SEM antecedently requires applying a CFA (Brown 2006).

9.5 Empirical results

The authors applied Stata version 12.1 and Excel 2010 to perform the necessary calculations and to present the results. First, the authors drew a comparison between the actual and the intended quota results. Table 9.2 provides an overview of both outcomes. The findings show 454 collected survey forms compared to the intended 450. The resulting proportions differed only slightly from the expected proportions, allowing the authors to continue to use the actual number of surveyed people.

Table 9.2: Expected versus actual sample proportions

		Quota sample *(N = 450)*			Actual survey *(N = 454)*		
Age	*District*	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*
15-64 years	Noord/Tanki Leendert	9.3	9.5	18.9	9.1	9.5	18.5
	Oranjestad	11.7	13.0	24.6	11.5	12.1	23.6
	Paradera/Sta Cruz	10.3	11.0	21.2	11.3	10.6	21.9
	Savaneta/Sanicolas	10.6	11.6	22.2	11.5	10.6	22.1
	Subtotal	41.9	45.0	86.9	43.3	42.8	86.1
65+ years	Noord/Tanki Leendert	0.9	1.1	2.0	1.1	1.1	2.2
	Oranjestad	1.6	2.3	3.9	1.5	2.6	4.2
	Paradera/Sta Cruz	1.4	1.7	3.0	1.3	1.8	3.1
	Savaneta/Sanicolas	1.8	2.4	4.1	2.0	2.4	4.4
	Subtotal	5.6	7.5	13.1	6.0	7.9	13.9

The profile of the respondents shows that 49.2% were males and 50.8% females (Table 9.3). 46.3% were younger than 40 years, and 20.7% were older than 60 years. 85% were born in Aruba, while 72% have lived on the island all their lives. About two thirds of the respondents held a job, with almost 80% having no direct daily involvement with tourists. Only 9.5% had an education that comprised of a bachelor degree or higher, and 65.4% earned Afl. 3,000 or less (about UD$ 1,675) gross per month. According to the 2010 Census data, 10.8% of the population aged 15 or older had an education of bachelor's degree or higher, while 40.0% had an income of Afl. 3,000 or lower. While the selected education characteristics were more or less in line with the census data, the survey seems to be overrepresented in the income category of Afl. 3,000 or less. However, the year 2010 was not a normal one as the economy was experiencing two years of recession, with repercussions for the unemployment rate and, thus, income. The following years were also different from normal, which may explain to some extent the gap in the income ratio difference between the census and the survey. Yet, these distinctive developments do not fully clarify the overrepresentation, which should be considered a limitation to this study.

Table 9.3: Respondents personal characteristics

	Numbers	*%*
Gender	*N = 453*	
Male	223	49.2
Female	230	50.8
Age	*N = 454*	
15 - 29 years	98	21.6
30 - 39 years	112	24.7
40 - 49 years	89	19.6
50 - 59 years	61	13.4
60 - 74 years	91	20.0
75+ years	3	0.7
Number of years living in Aruba	*N = 454*	
All their lives	328	72.2
5 years or less	23	5.1
Between 6 and 15 years	40	8.8
More than 15 years but less than all their lives	63	13.9
Country of birth	*N = 454*	
Aruba	386	85.0
Colombia	16	3.5
Holland	8	1.8
Curacao	10	2.2
Venezuela	17	3.7
Dominican Republic	6	1.3
Other	11	2.4
Nationality	*N = 454*	
Dutch	432	95.2
Colombian	8	1.8
Venezuelan	7	1.5
Dominican	1	0.2
Other	6	1.3

Table 9.3: Respondents personal characteristics *(continued)*

	Numbers	*%*
Marital status	*N = 449*	
Single	105	23.4
Living together (not married)	67	14.9
Married	200	44.5
Divorced	35	7.8
Widower	42	9.4
Activity status	*N = 453*	
Employed	301	66.4
Unemployed	25	5.5
Pensioner	61	13.5
Inactive because of health reasons	35	7.7
Student	21	4.6
Homemaker	10	2.2
Directly involved with tourists on a daily basis	*N= 448*	
Yes	91	20.3
No	357	79.7
Highest education obtained	*N= 453*	
Primary education or less	83	18.3
Lower vocational	90	19.9
Higher vocational	93	20.5
Lower general secondary	103	22.7
Higher general secondary	24	5.3
Pre-university	13	2.9
Bachelor's degree	37	8.2
Master's degree	5	1.1
Ph.D. degree	1	0.2
Other	4	0.9
Gross income per month (1 Afl. = 0.56 US$)	*N= 451*	
Afl. 1,700 or less	120	26.6
Between Afl. 1,701 and Afl. 2,500	88	19.5
Between Afl. 2,501 and Afl. 3,000	87	19.3
Between Afl. 3,001 and Afl. 4,000	75	16.6
Between Afl. 4,001 and Afl. 5,000	40	8.9
Between Afl. 5,001 and Afl. 7,000	21	4.7
Between Afl. 7,001 and Afl. 9,000	11	2.4
Between Afl. 9,001 and Afl. 12,000	4	0.9
Afl. 12,001 or more	5	1.1

Following Fabregar et al. (1999), the authors randomly split the sample into two equal groups, each containing 227 records. One half was used for the EFA, while the CFA was conducted on the other half. With respect to the EFA, the authors used principal factor method (PF), together with varimax rotation (to simplify and clarify the data structure (Costello & Osborne 2005)) and scree plotting to identify the factors and factor loadings. According to Brown (2006), the PF is one of the most frequently used factor extraction techniques, together with the maximum likelihood approach (MLA). Contrary to the MLA, the PF does not require the normal distribution assumption, and is less likely than the MLA to yield improper solutions (Fabrigar et al., 1999).

Table 9.4 provides the EFA results. Following Hair et al. (2010), the authors used a benchmark factor loading of 0.5 to include items in a factor. The EFA produced a total of five factors, each representing the linear combination of a number of the original variables (Hair et al., 2010). The TD factor incorporated three items ((i) marketing efforts by the government; (ii) quality of the infrastructure; and (iii) quality of the education system) with an overall eigenvalue of 1.507. The latter indicates the amount of variance explained by a factor (Hair et al., 2010). All three items had a factor loading larger than 0.6, indicating a significant correlation of each of the selected variables with the factor itself. Overall, this factor explained 68.2% of the variance of the TD scale. According to Hair et al. (2010), the benchmark for variance explanation should be 60% or higher, indicating compliance in the case of this study. The Cronbach's alpha for this scale was somewhat higher than the required minimum of 0.7 (as suggested by Hair et al., 2010), indicating a good level of internal consistency. The communality values, which indicate the total amount of variance an original variable shares with all other variables (Hair et al., 2010), varied between 0.428 and 0.513. Particularly the items 'quality of the infrastructure' and 'quality of the education system' (TD3) were situated towards the low end (i.e., explaining, respectively, only 48.8% and 42.8% of the variance in the variable). According to Hair et al. (2010), variables should generally have communalities larger than 0.5 if they are to be retained in the analysis. However, in one of their recommendations, these authors also suggested that one could ignore such problematic variables, and interpret the solution as is. Moreover, these same authors retained one variable with a communality lower than 0.3 in a provided example, because it still had a high factor loading (0.514). Following this praxis, the authors of this study decided to retain these variables in the analysis.

Table 9.4: Exploratory factor analysis of underlying dimensions

	Eigenvalue	Factor loadings	Variance explained	Cronbach's alpha	Communality
Tourism development					
Factor 1: (TD) Economic effect on tourism development	1.507		0.682	0.735	
Marketing efforts by the government (TD1)		0.677			0.513
Quality of the infrastructure (TD2)		0.692			0.488
Quality of the education system (TD3)		0.626			0.428
Economic development					
Factor 2: (ED1) Tourism's impact on economic development	2.597		0.604	0.937	
The economy in general (ED1_1)		0.910			0.832
The number of jobs (ED1_2)		0.917			0.856
The number of business opportunities (ED1_3)		0.864			0.749
Factor 3: (ED2) QoL effect on economic development	1.353		0.315	0.828	
Skills and education impacting the success of the company people work for (ED2_1)		0.787			0.623
Skills and education impacting the daily economic and financial activities of people (ED2_2)		0.770			0.632
Quality of life					
Factor 4 (QOL1): Tourism's impact on residents' QoL	4.881		0.641	0.952	
Opportunity to get a job (QOL1_1)		0.906			0.900
Wage or income (QOL1_2)		0.896			0.886
Factor 5 (QOL2): Economic impact on residents' QoL	1.222		0.161	0.888	
Amount of sleeping hours (QOL2_1)		0.875			0.773
Amount of exercise hours (QOL2_2)		0.862			0.754

The economic development construct consisted of two factors with respective eigenvalues of 2.597 and 1.353. The first factor (tourism's impact on economic development) retained three items ((i) the economy in general; (ii) the number of jobs; and (iii) the number of business opportunities), with factor loadings well above 0.8, and explaining 60.4% of the total variance of the construct. The Cronbach's alphas of both factors scored above 0.8, whereas the communalities were also high, varying between 0.749 and 0.856. The second factor (QoL's effect on economic development) contained two items with respective factor loadings of 0.787 and 0.770, explaining 31.5% of the overall variance of the construct. The Cronbach's alpha of this factor provided evidence of a sound level of internal consistency. Together, the two factors explained 91.8% of the overall variance in the economic development construct.

Two factors represented the construct QoL with eigen values of 4.881 and 1.222, respectively. The first factor (tourism's impact on residents' QoL) kept two items ((i) opportunity to get a job; and (ii) wage and income), with factor loadings close to 0.9. This factor explained about 64.1% of the overall variance in the construct, and the high Cronbach's alpha (0.952) signaled a satisfactory level of internal consistency. Similarly, the communalities of both items were more than acceptable, both explaining more than 88% of the variance in the respective variables. The second factor (economic impacts on residents' QoL) also upheld two items ((i) amount of sleeping hours; and (ii) amount of exercise hours), with factor loadings between 0.86 and 0.88. The Cronbach's alpha of 0.888 suggested more than adequate levels of internal consistency, since the items' communalities varied between 0.75 and 0.78. Jointly, the two factors explained about 80.2% of the overall variance in the QoL construct.

The results of the EFA test were in line with the three-construct model discussed previously, each one influenced by the selected respective items. These EFA findings provided a strong base for applying a CFA. The CFA allows for testing how well the measured variables represent the constructs (Hair et al., 2010). Table 9.5 presents the testing results of the five factors stemming from the EFA analysis, and based on the other half of the split sample. All standardized factor loadings were significant at the 1% level, and, except for the item 'quality of the education system' (TD3), were also larger than the 0.7 benchmark that has been suggested by Hair et al. (2010). Still, the result for TD3 exceeded the required minimum of 0.5 that was suggested by these authors. The construct reliability scores were between 0.804 and 0.948, which are all higher than the minimum of 0.7, suggested by Hair et al. (2010), signaling internal consistency of the measured variables that represent each construct. Moreover, the average variances extracted for all factors were between 0.579 and 0.902, and were therefore

higher than the 0.5 suggested by Hair et al. (2010). These latter results indicated adequate validity convergence; in other words, the variables commonly share a proportion of the variance.

According to Hair et al. (2010), the χ^2 value and degree of freedom, together with the Comparative Fit Index (CFI) or Tucker-Lewis Index (TLI), and the Root Mean Squared Error of Approximation (RMSEA) will generally provide adequately unique information to evaluate a model. With respect to the validation of the CFA measurement model, the χ^2 values were significant implying that there may be missing paths in the model specification (StataCorp 2011; Hair et al., 2010). However, the meaningfulness of this test decreases as sample sizes or the number of observed variables become large (Hair et al., 2010). Therefore, the authors calculated the ratio between the χ^2 and its degrees of freedom, which is a commonly suggested criterion (Schreiber et al., 2006; Hair et al., 2010). The ratio of 1.8790 is lower than the acceptance criteria of Screiber et al. (2006) (< 3.0) and Hair et al. (2010) (< 2.0 → very good; 2.0 < [χ^2/degrees of freedom] < 5.0 → adequate). Moreover, the TLI of 0.962 was higher than the 0.95 benchmark recommended by both Schreiber et al. (2006) and Hair et al. (2010), indicating a good fit. The CFI of 0.975 was also higher than the 0.95 acceptance benchmark suggested by Schreiber et al. (2006) and Hair et al. (2010), whereas the RMSEA of 0.039 was smaller than the 0.06 rule of acceptance of Schreiber et al. (2006). These findings indicate that the CFA has adequate goodness of fit, and the measurement model is, therefore, acceptable.

Table 9.5: Confirmatory factor analysis of underlying dimensions

	Standardized loading		Construct reliability	Average variance extracted
Tourism development				
Factor 1: (TD) Economic effect on tourism development			0.804	0.579
Marketing efforts by the government (TD1)	0.745	***		
Quality of the infrastructure (TD2)	0.853	***		
Quality of the education system (TD3)	0.674	***		
Economic development				
Factor 2: (ED1) Tourism's impact on economic development			0.890	0.730
The economy in general (ED1_1)	0.816	***		
The number of jobs (ED1_2)	0.940	***		
The number of business opportunities (ED1_3)	0.800	***		
Factor 3: (ED2) QoL effect on economic development			0.823	0.700
Skills and education impacting the success of the company people work for (ED2_1)	0.885	***		
Skills and education impacting the daily economic and financial activities of people (ED2_2)	0.785	***		
Quality of life				
Factor 4 (QOL1): Tourism's impact on residents' QoL			0.948	0.902
Opportunity to get a job (QOL1_1)	0.954	***		
Wage or income (QOL1_2)	0.945	***		
Factor 5 (QOL2): Economic impact on residents' QoL			0.916	0.845
Amount of sleeping hours (QOL2_1)	0.923	***		
Amount of exercise hours (QOL2_2)	0.916	***		

Goodness of fit indicators:

$\chi2(44) = 82.678$ (p=0.000) → ratio $\chi2$ to df = 1.8790 *(criterion: < 5)*

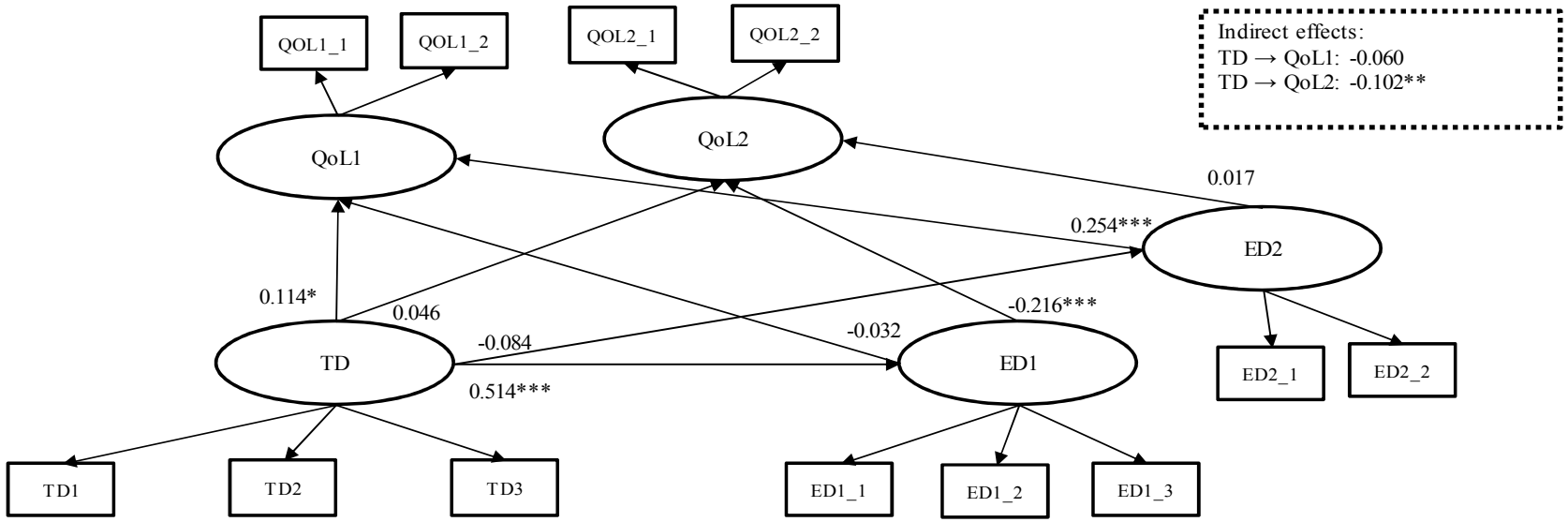
Tucker-Lewis index = 0.962 *(criterion: ≥ 0.950)*

Comparative fit index = 0.975 *(criterion: ≥ 0.950)*

Root mean squared error of approximation = 0.039 *(criterion: < 0.06)*

Note: *** indicates significance at 1% level.

The third step in the analysis comprised applying a SEM analysis to test the structural model, and to delineate the relationships between the constructs TD, QoL and economic development. The analysis integrated those factors identified from the EFA and CFA procedures, and was applied to the whole sample. One challenge that the authors faced was to find a way of examining possible two-way relationships between the constructs potentially containing both cause and effect elements. According to Hair et al. (2010), it is difficult to produce a set of conditions that supports a bilateral relationship with cross-sectional data. The study avoided this conundrum by estimating two SEMs simultaneously instead of one. The first structural model estimated the direct and indirect effects of TD on QoL (TD → QoL, and TD → economic development → QoL). The second structural model aimed to estimate the direct and indirect effects of QoL on TD (QoL → TD, and QoL → economic development → TD). Figures 9.2a and 9.2b show the results of both models. The figures expressly excluded the items' factor loadings with a view to improve the visibility and understanding of results, although these are available on request. All item loadings were statistically significant at 1%. The results from Figure 9.2a reveal that TD has a positive significant (10%) direct influence on QoL1 ((i) opportunity to get a job; and (ii) wage or income), but not on QoL2 ((i) amount of sleeping hours; (ii) amount of exercise hours). Furthermore, TD has a positive significant (1%) direct impact on ED1 ((i) the economy in general; (ii) the number of jobs; and (iii) the number of business opportunities), but not on ED2 ((i) skills and education impacting the success of the company people work for; and (ii) skills and education impacting the daily economic and financial activities of people). Moreover, ED1 has a negative significant (1%) impact on QoL2, but not on QoL1. ED2 has a positive significant (1%) impact on QoL1, but not on QoL2. The indirect effect analysis shows that TD has a significant (5%) negative impact on QoL2, but not on QoL1. The indirect relationship found with QoL2 validates the role of economic development as a mediating variable.

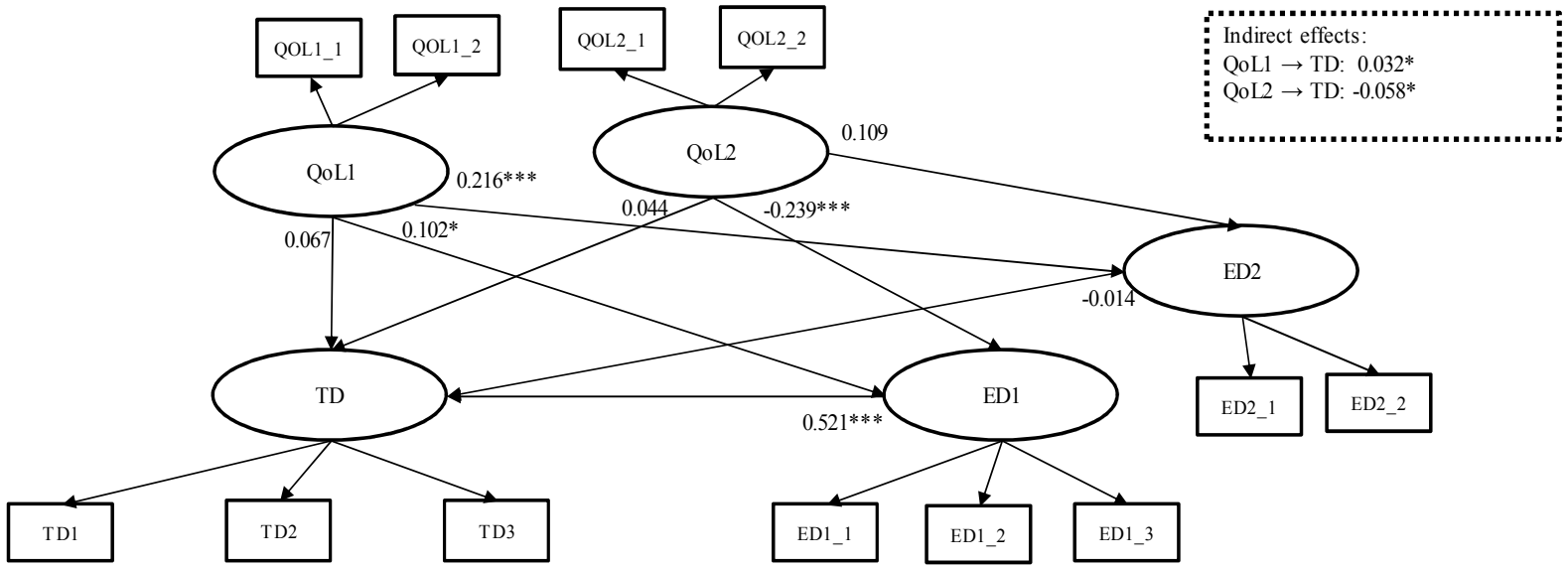


QOL1: job and income QOL2: exercise and sleeping hours ED1: economy, jobs and business opportunities ED2: skills and education

Goodness of fit indicators:
$\chi2(44) = 101.645$ (p=0.000) → ratio $\chi2$ to df = 2.310 *(criterion: < 5)*
Tucker-Lewis index = 0.979 *(criterion: ≥ 0.950)*
Comparative fit index = 0.988 *(criterion: ≥ 0.950)*
Root mean squared error of approximation = 0.044 *(criterion: < 0.06)*

Note: *, **, and *** indicate significance at, respectively 10%, 5%, and 1%.

Figure 9.2a: Structural equation model from the perspective of tourism development impacting the quality of life of residents



QOL1: job and income QOL2: exercise and sleeping hours ED1: economy, jobs and business opportunities ED2: skills and education

Goodness of fit indicators:

$\chi2(45) = 109.906$ (p=0.000) → ratio $\chi2$ to df = 2.442 *(criterion: < 5)*

Tucker-Lewis index = 0.970 *(criterion: ≥ 0.950)*

Comparative fit index = 0.979 *(criterion: ≥ 0.950)*

Root mean squared error of approximation = 0.057 *(criterion: < 0.06)*

Note: *, **, and *** indicate significance at, respectively 10%, 5%, and 1%.

Figure 9.2b: Structural equation model from the perspective of quality of life impacting tourism development

The findings from Figure 9.2b suggest that neither QoL1 nor QoL2 has a significant direct impact on TD. However, QoL1 has a significant positive effect on both ED1 (10%) and ED2 (1%). Alternatively, QoL2 has a significant (10%) negative impact on ED1. The latter factor, in turn, has a significant positive impact on TD (1%), but ED2 has no significant effect on the latter. Analysis of the indirect effects reveals that both QoL1 and QoL2 have a significant (both at 10%) impact on TD, whereby the indirect effect of QoL2 on TD is negative. Again, the indirect relationships confirm the position of economic development as a mediating variable.

The model's diagnostics of both estimations in Figures 9.2a and 9.2b suggest adequate structural model fit. The ratio between the χ^2 and the degrees of freedom are in both instances below 5, whereas both TLIs and CFIs are larger than the minimum criterion of 0.95. The RMSEA in both instances are smaller than the benchmark of 0.06.

The SEM outcomes suggest acceptance of all hypotheses, except for H_2 (Table 6). The latter means that QoL of residents in Aruba does not directly affect TD. Validation of hypotheses H_1 and H_3-H_8 implies that:

(1) TD has both a direct and indirect impact on QoL (H_1 respectively H_7);
(2) TD has a direct impact on economic development (H_3);
(3) Economic development has a direct impact on both TD and QoL (H_4 respectively H_5);
(4) QoL has a direct impact on economic development (H_6); and
(5) QoL has an indirect effect on TD (H_8).

Table 9.6: Hypotheses validation

	Outcome	Confidence level
H_1: Tourism development has an impact on the quality of life of residents of a destination (TD → QoL)	Accept	
TD → QoL1	Accept	90%
TD → QoL2	Reject	
H_2: Quality of life of residents of a destination has an impact on the tourism development of a destination (QoL → TD)	Reject	
QoL1 → TD	Reject	
QoL2 → TD	Reject	
H_3: Tourism development has an impact on long-run economic growth (TD → ED)	Accept	
TD → ED1	Accept	99%
TD → ED2	Reject	

Table 9.6: Hypotheses validation *(continued)*

	Outcome	Confidence level
H_4: Economic growth at a destination has an impact on tourism development (ED →TD)	Accept	
ED1 → TD	Accept	99%
ED2 → TD	Reject	
H_5: Economic growth has an impact on the quality of life of residents (ED → QoL)	Accept	
ED1 → QoL1	Reject	
ED2 → QoL1	Accept	99%
ED1 → QoL2	Accept	99%
ED2 → QoL2	Reject	
H_6: Quality of life of residents has an impact on the economic growth of a destination (QoL → ED)	Accept	
QoL1 → ED1	Accept	90%
QoL2 → ED1	Accept	99%
QoL1 → ED2	Accept	99%
QoL2 → ED2	Reject	
<u>Indirect bilateral relation between tourism development and quality of life</u>		
H_7: Tourism development indirectly impacts the quality of life of residents, through the mediating role of economic growth (TD → QoL)	Accept	
TD → QoL1	Reject	
TD → QoL2	Accept	95%
H_8: Quality of life of residents indirectly impacts tourism development, through the mediating role of economic growth (TD → QoL)	Accept	
QoL1 → TD	Accept	90%
QoL2 → TD	Accept	90%

The rejection of hypothesis H_2 whereby QoL does not directly affect TD can be explained with reference to the measure of development of the destination. The island shows some characteristics of the consolidation stage of the Tourism Area Life Cycle of Butler (1980); i.e., a major part of the island's economy is tied to tourism, with many major hotel chains present but only a few ones being added from time to time. This state of affairs may have affected the share of direct tourism jobs in the overall employment numbers. For example, according to population censuses conducted by the

Central Bureau of Statistics in 1991 and 2010, the share of employed persons in the hotel and restaurant sectors actually decreased from 36.3% in 1991 to 20.5% in 2010, whereas the total employed population rose by almost 60%. This may explain why both QoL factors (both likely to be associated with labor activities) do not significantly impact TD (QoL → TD), but do so through economic development (QoL → economic development → TD).

9.6 Conclusion

This study investigated the direct and indirect bilateral relationship between TD and QoL with economic development as a mediating variable. This is the first study to examine the reciprocal connections between these three constructs by using a structural model.

The results suggest that TD affects the QoL of residents of the destination under review, both through the direct (TD → QoL) and indirect connections (TD → economic development → QoL). However, the direct effect is only related to the QoL dimensions 'opportunity to get a job' and 'wage or income'. With respect to the indirect effects of TD on QoL, the study found an imprint in the QoL dimensions 'amount of sleeping hours' and 'amount of exercise hours', and the negative sign suggests that TD indirectly seems to cause some measure of harm to these activities of the residents. Alternatively, QoL does not affect TD in a direct way, but rather in an indirect manner. The indirect effects of QoL spread to job-related aspects ('opportunity to get a job' and 'wage or income') and physical behavior ('amount of sleeping hours' and 'amount of exercise hours'), whereas the negative outcome of the latter relationship implies that the lack of sleep and exercise has a negative effect on TD. The mediating role of the economic development construct occurs through the connections TD → ED1 → QoL2 or TD → ED2 → QoL1. This suggests that the mediating role of economic development is selective when impacting QoL: the general characteristics of the economy (ED1: 'the economy in general', 'job numbers' and 'business opportunities') negatively impact the lifestyle behavior and practice-related QoL dimensions (QoL2), while the skills and education characteristics of people (ED2) positively impact the job-related dimensions of QoL (QoL1).

The results about the relationship between the three constructs were generally in line with those found in the study by Ridderstaat et al. (2014), the latter which approached the problem using macro statistics (objective approach). However, there are three inconsistent outcomes separating the two approaches, i.e., (i) the direct effect of QoL on TD; (ii) the direct impact

of economic development on QoL; and (iii) the indirect impact of TD on QoL, with economic development as a mediating variable. The high degree of overlapping in these outcomes indicate that in the case of Aruba, the limitations of the objective and subjective approaches were likely curbed in such a way as to bring the outcomes of both methods closer to each other.

The findings set out above are important, firstly because they suggest a more complex relationship existing between TD, QoL, and economic development. The active nature of QoL implies that in the case of Aruba, human development is not an end on itself, but can work as a means to influence future TD and economic growth. Secondly, the results showed that not all aspects of the three constructs involved in this study were material in defining the outcome of the relationships. This means that TD, economic development, and QoL are not homogenous from within, but each contain multiple dimensions that have the potential to influence or be influenced by dimensions in other constructs. Understanding the heterogeneity of these latent variables is important if one were to attempt to arrive at a more accurate understanding of the driving forces of the interconnectedness between TD, QoL, and economic development. Thirdly, the findings are important, because they shed light on the comparability of the results found in both objective- and subjective-approach environments, thereby providing a more accurate picture of the true relationship between TD, economic development and QoL. Fourthly, the findings offer new insights for theory development in a holistic feedback relationship between TD, economic development and QoL. Specifically, the theoretical propositions stemming from this study are:

(1) Development is a continuum of interacting forces, whereby one type of development affects the other. This interaction means that human development is not necessarily an end in itself, but can be a means for other forms of development, such as TD and economic development.
(2) TD and QoL have an intrinsically reciprocal relationship, in which the intensity and significance of the two-way connection depend on their dimensional representations. For example, the study demonstrated that the job-related dimensions of QoL had a positive impact on TD, while the case of the health-related QoL dimension indicates a negative effect.
(3) Economic development has a mediating role between TD and QoL, depending on its dimensional composition.

The findings are also important because of the managerial implications that they bring to the fore. Policy-makers should become aware of the potential of the QoL of residents to influence TD and economic development. Firstly, recognizing the non-passive character of QoL could allow decision-makers to make better use of the potentials of this construct, and harness it towards

improving future TD and economic development. Secondly, understanding the dimensionality of QoL as well as the scales of TD and economic development could guide policy-makers to manage the result of these constructs adequately. For example, the results of this investigation suggest that the amount of sleeping and exercise hours of people has a negative impact on the economy (the economy in general, including number of jobs and business opportunities) and, eventually, also on tourism. These stressful conditions reveal disconcerting health-related behavior and practices which require policy attention and action. Managers and policy-makers could, for example, consider introducing more work flexibility (e.g., start and end times), which may contribute to positive lifestyle behaviors of employees (including better sleep), and could reduce negative health-related outcomes, such as sickness-absences, stress, and other work-related impairments (Grzywacs et al., 2007). Moreover, managers and policy-makers could allow for adequate resting time between work periods and/or workdays, as it may positively impact sleep quality (Rosekind et al., 2010). Also, managers and policy-makers could consider reducing the work duty hours of employees, and use this 'free time' for mandatory exercise by their personnel. Besides improved exercise activity, this could lead to sustained or even improved production levels (Von Thiele Schwarz & Hasson, 2011).

Four limitations applied to this study. Firstly, this investigation is based on a limited number of questions, because of the risk of non-response when subjecting respondents to more queries. The scales attributed to the QoL of people may include other dimensions that could also impact or be impacted by TD and economic development, for example, feelings of reward (Gjerald 2005), political voice and governance (Stiglitz et al., 2009), and spirituality (Kazana & Kazaklis, 2009). Secondly, some questions in the survey were self-developed, because of limitations in terms of similar investigations in the literature. These questions require further testing in forthcoming studies. Thirdly, the survey may contain possible overrepresentation of respondents with a certain income (Afl. 3,000 or lower), which could influence the findings of this study. Fourthly, the study did not consider the effects of demographic characteristics, such as income, age and gender, on the outcome. The personal characteristics of the respondents could influence their perceptions, and ultimately the linkages between TD, QoL and economic development.

Future research should consider expanding this line of investigation towards other tourist destinations with a view to obtain a broader perspective of the nature of the bilateral relationship between TD, QoL, and economic growth. Moreover, future studies should incorporate additional dimensions of TD, QoL and economic development for testing against each other to increase our understanding of the workings of the

interconnectedness between these constructs. Additionally, future investigations should consider the effect of other constructs as mediating variables between TD and QoL, such as the environment and culture. Forthcoming investigations could also explore the relationship between the three constructs by applying regression analysis incorporating, among others, interaction of the constructs and personal characteristics of the respondents. Of course, whenever possible, these future investigations should be considered both from the objective and subjective approach perspectives with a view to achieve a balanced understanding of the relationship between TD and QoL.

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